

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

**Ex parte Feuerborn**

**Appeal No. \_\_\_\_\_**

Serial No.: 10/732,737  
Filed: December 10, 2003  
Art Unit: 3682  
Examiner: Marcus Charles  
Applicant: Frank Joseph Feuerborn  
Title: REDUCED RIB-HEIGHT MULTI-RIBBED V-BELT  
Attorney Docket: GTRC-217  
Confirmation No.: 6676

Cincinnati, Ohio 45202

May 21, 2007

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

**BRIEF ON APPEAL**

This brief is in furtherance of Appellant's Notice of Appeal filed March 22, 2007, appealing the decision of the Examiner dated October 6, 2006, finally rejecting claims 1-5 (all pending claims). An Amendment responding to the final Office Action was filed February 26, 2007, to place the claims in better condition for appeal by canceling claim 4 and amending claim 1 to include the subject matter of claim 4. A copy of the amended claims appears in the Claims Appendix to this brief.

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**I. Real Party in Interest**

The real party in interest is The Goodyear Tire & Rubber Company, of Akron, Ohio, which is the assignee of the present invention.

**II. Related Appeals and Interferences**

There are no related appeals or interferences known to the Appellant or the Appellant's legal representative which will directly affect, or be directly affected by, or have a bearing on the decision of the Board in the present Appeal.

**III. Status of Claims**

Claims 1-5 remain pending in the application after the final rejection dated October 6, 2006. Claim 4 was canceled in an Amendment filed February 26, 2007, and the subject matter of claim 4 was added to claim 1. Claims 1-3, and 5 are therefore subject to this Appeal. In the final Office Action dated October 6, 2006, claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,840,607 to Hitchcock et al. Accordingly, Appellant presumes that amended claim 1, and dependent claims 2 and 3, stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hitchcock '607. Claim 5 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Hitchcock '607 in view of U.S. Patent No. 6,647,278 to Hull.

#### **IV. Status of Amendments**

An after-final Amendment was filed February 26, 2007, to cancel claim 4 and include the subject matter of claim 4 in claim 1, thereby placing the claims in better condition for appeal. During telephone calls with the Examiner on March 19 and May 17, 2007, the Examiner indicated that he would enter the Amendment, as noted in the Reply to Advisory Action mailed March 21, 2007.

#### **V. Summary of Claimed Subject Matter**

Claim 1 is the only independent claim. Below, Appellant has provided a summary of the claim language mapped to the supporting disclosure of an exemplary embodiment for representation purposes only.

Claim 1 recites a multiple-rib V-belt 10 including a belt body 12 formed in a continuous loop. (Application at p. 4, lines 11-13.) A plurality of generally V-shaped grooves 14 are formed in the belt body 12 and are spaced apart to define a plurality of circumferentially extending ribs 16. (Application at p. 4, lines 16-18; p. 5, lines 7-10; and FIG. 7.) The belt body 12 and ribs 16 are sized and arranged according to standards for a K-section V-belt, except that the grooves 14 have a depth  $D_1$  of approximately .070 inch, and the belt has an overall thickness  $H_1$  of approximately 0.145 inch to approximately 0.155 inch. (Application at p. 6, lines 16-22.)

## **VI. Grounds of Rejection to be Reviewed on Appeal**

The rejections of claims 1-3, and 5 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,840,607 to Hitchcock et al.

## **VII. Argument**

### **The Rejections of Claims 1-3, and 5 Under 35 U.S.C. §103(a)**

Claims 1-3 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,840,607 to Hitchcock et al. Claim 5 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Hitchcock '607 in view of U.S. Patent No. 6,647,278 to Hull. Claim 1 is the only independent claim of this rejected group and is directed to a multiple-rib V-belt comprising a belt body and a plurality of V-shaped grooves, wherein

said belt body and said ribs are sized and arranged according to standards for a K-section V-belt, except that said grooves have a depth of approximately .070 inch and said belt has an overall thickness of approximately 0.145 inch to approximately 0.155 inch.

Accordingly, claim 1 is directed to a multiple-rib V-belt that is modified from established standard geometric specifications for a K-section V-belt. The standard dimensions for such K-section V-belts are set forth in the surface vehicle standard SAE J-1459, titled "V-Ribbed Belts And Pulleys", published by the Society of Automotive Engineers.

"To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable

expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." MPEP §2143. To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 180 USPQ 580 (CCPA 1974). The mere fact that elements of a claimed invention are known in the art is not, of itself, sufficient basis for an obviousness rejection. In re Katzab, 55 USPQ2d 1313 (Fed. Cir. 2000); MPEP §2143.01. When a claimed invention provides results that are unexpected in view of the prior art, such unexpected results are evidence of the nonobviousness of the invention. See, In re Papesch, 137 USPQ 43 (CCPA 1963).

The rejection of claim 1 should be reversed because Hitchcock '607 fails to teach or suggest a multiple rib V-belt having an overall thickness and a groove depth as recited in claim 1, which are reduced from the standard dimensions for a K-section V-belt. Rather, Hitchcock '607 is directed to a modified pulley that can be used with standard K-type V-belts.

Specifically, Hitchcock '607 states:

There are three types of poly-v belts sold commercially. These are "K" type, the "J" type and the "L" type. The "K" type poly-v belt is generally used in automotive applications.

(Hitchcock '607 at col. 1, lines 18-21.)

It is an object of the present invention to provide a pulley for use in a v-belt power transmission system which is lower in weight and material content than prior designs, and which is less expensive than existing pulleys without any reduction in quality or operating efficiency. . . . The forgoing objects are accomplished by a spin formed sheet metal pulley preferably for driving "K" type poly v-belts.

(Hitchcock '607 at col. 1, lines 49-68.)

The "truncated rib" K type V-belt referred to in Hitchcock '607 is a conventional, standard V-belt section, and not a V-belt that has been further modified by varying the dimensions for a standard V-belt section in a manner consistent with claim 1. Nowhere in Hitchcock '607 is there a suggestion to modify the standard K-section V-belt, as set forth in claim 1. Moreover, no rationale has been proffered as to why a person would modify a K-section V-belt when persons skilled in the art believed that doing so would decrease the fatigue life of the belt. As noted in the Application at page 3, lines 8-13 and at page 6, lines 8-13, the reduction in overall thickness and groove depth in the multiple rib V-belt of the present invention has provided the unexpected result of improved fatigue life when a reduction in fatigue life was expected. For at least these reasons, Appellant respectfully requests that the rejection of claim 1 over Hitchcock '607 be reversed.

Claims 2 and 3 each depend from independent claim 1 and are therefore in condition for allowance for at least the reasons discussed above with respect to independent claim 1. Accordingly, Appellant respectfully requests that the rejections of claims 2 and 3 over Hitchcock '607 be reversed.

U.S. Patent No. 6,647,278 to Hull is directed to a power transmission belt and was applied only with respect to the grooves 28 extending transverse to the longitudinal direction of the belt. Hull '278 fails to teach or suggest a modification of Hitchcock '607 that cures the deficiencies of Hitchcock '607 discussed above. Accordingly, Appellant respectfully requests that the rejection of claim 5 over Hitchcock '607 in view of Hull '278 be reversed.

## **Conclusion**

For the reasons stated above, Appellant respectfully urges the Board to reverse the rejections of claims 1-3 and 5.

If there are any questions regarding the foregoing, please contact the undersigned at 513/241-2324. If any charges or credits are necessary to complete this communication, please apply them to Deposit Account 23-3000.

Respectfully submitted,

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## **VIII. CLAIMS APPENDIX**

1. (PREVIOUSLY PRESENTED) A multiple rib V-belt, comprising:  
a belt body formed in a continuous loop; and  
a plurality of generally v-shaped grooves formed in said belt body and spaced apart to define a plurality of circumferentially extending ribs;  
wherein said belt body and said ribs are sized and arranged according to standards for a K-section V-belt, except that said grooves have a depth of approximately .070 inch and said belt has an overall thickness of approximately 0.145 inch to approximately 0.155 inch.
2. (ORIGINAL) The V-belt of claim 1, wherein said ribs have a profile formed according to a given V-belt section and said groove depth is reduced by truncating the tip of the ribs.
3. (ORIGINAL) The V-belt of claim 1, wherein said groove depth is reduced by approximately 0.015 inch.
4. (CANCELED)
5. (ORIGINAL) The V-belt of claim 1, further comprising transverse slots formed in said belt to define cogs along said ribs.

## **IX. EVIDENCE APPENDIX**

There is no evidence submitted in this Appeal.

**X. RELATED PROCEEDINGS APPENDIX**

There is no related proceeding in this Appeal.